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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,969	10/13/2005	Anton Arnold Van Der Heiden	1458-003	1664
32905	7590	10/07/2010		
JONDLE & ASSOCIATES P.C. 858 HAPPY CANYON ROAD SUITE 230 CASTLE ROCK, CO 80108			EXAMINER BUI, PHUONG T	
			ART UNIT 1638	PAPER NUMBER
			NOTIFICATION DATE 10/07/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JondleOA@jondlelaw.com

Office Action Summary	Application No. 10/552,969	Applicant(s) VAN DER HEIDEN, ANTON ARNOLD	
	Examiner Phuong T. Bui	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12, 14-21, 23-26, 29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 14-21, 23-26, 29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Office acknowledges the receipt of Applicant's Request for Continued Examination filed December 29, 2009.

Claims 12, 14-21, 23-26, 29 and 31 are pending and are examined in the instant application.

All previous rejections not set forth below have been withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112, second paragraph

2. Claims 12, 14-21, 23-26, 29 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12(a), it is unclear whether the deletion, rearrangement or mutation is referring to the enzyme or the gene encoding the enzyme.

In claim 12(c), "increased" is a relative term lacking a comparative basis.

In claims 23 and 29, the combination of *CL* allele (DNA) and capsanthin-capsorubin synthase (enzyme) is unclear. It is suggested the "Y allele" be recited.

Clarification and/or correction are required.

Claim Rejections - 35 USC § 112

3. Claims 12, 14-21, 23-26, 29 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant is invited to point to the page and line number in the originally filed specification where support for crossing a first parent with a deletion, rearrangement or mutation in the enzyme capsanthin-capsorubin synthase with a second parent having a recessive *cl* allele can be found. The specification only provides support for selfing the F1 generation having the *Y/y*, *CL/cl* phenotype (p. 6, ln. 29-31).

In claims 18, 23 and 29, the recitation of "green immature" was amended to "mature". Applicant is invited to point to the page and line number in the originally filed specification to show the values were obtained by comparison between mature green fruits having *y/y;cl/cl* alleles and other mature fruits not possessing the *y/y;cl/cl* alleles. It would appear the values were obtained by comparison between "non-mature" fruits (see p. 7, lns. 19-27). It should be noted that claim 12 recites "ripe green fruit".

Absent of such support, Applicant is required to cancel the new matter in response to the instant Office action.

Claim Rejections - 35 USC § 102

4. Claims 12, 14-21, 23-26, 29 and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith, PG (J. Hered., Vol. 41, No. 5, May 1950, pp. 138-140) in light of Shifriss et al. (Euphytica, Vol. 60, 1992, pp. 123-126), Park et al. (Korean Journal of Plant Pathology, Vol. 5, Nol. 3, 1989, pp. 262-270) and Osuna-Garcia et al. (Journal of Agricultural and Food Chemistry, Vol. 46, Nol. 12, Dec 1998, pp. 5093-5096), all previously cited.

Smith teaches a method whereby a brown *Capsicum annuum* fruited plant designated "*R cl*" (Applicant's *Y/Y;cl/cl*) is crossed with a yellow *Capsicum annuum* fruited plant designated "*r Cl*" (Applicant's *y/y;CL/CL*). By simple Mendelian genetics, the F1 generation is *Y/y;CL/cl*. The F2 generation is obtained by crossing two F1 plants: *Y/y;CL/cl* x *Y/y;CL/cl*. This cross gives a ratio of 9 red : 3 brown : to 3 yellow : 1 green (Table II). The first parent (*Y/y;CL/cl*) has an allele with a genetic mutation which controls the red color component (p. 138, col. 1), same as in claim 1(a). The second parent, also *Y/y;CL/cl*, has a recessive *cl* allele (same as in claim 1(b)). Thus, in the F2 generation, the 9:3:3:1 ratio obtained means one of the resulting plant from the cross is *y/y;cl/cl*. This plant is green even when ripe (Table II), same as in claim 1(c). Shiffriss teaches the green pepper of Smith is designated Permagreen, and is genetically recessive at *y* and *cl* alleles, *yy cl/cl* (p. 126), which indicates the ripe green plant of the instant application has the same two homozygous recessive alleles as the plant of Smith. The specification states the capsanthin-capsorubin synthase gene is responsible for the trait *Y* involved in the synthesis of red carotenoid pigments in *Capsicum* fruits (p. 2 Ins. 17-24). Thus, if the "*y*" recessive allele of the instant application is due to a deletion, rearrangement or mutation in the enzyme capsanthin-capsorubin synthase, then the "*y*" of Smith is also due to a deletion, rearrangement or mutation in the enzyme capsanthin-capsorubin synthase. Most commercial green peppers are non-mature when picked, and thus are not as sweet as mature red peppers (see specification, p. 3, Ins. 9-25). Since the pepper of Smith remains green when matured, or ripened, it inherently has higher sugar content than the non-mature green

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peppers, in light of Park. Park teaches ripened peppers have higher sugar (sucrose) content than immature peppers (Abstract). With regard to the ascorbic acid level, Osuna-Garcia teaches peppers increase in ascorbic acid content as they ripen (Abstract). Because the method steps of Smith are identical to those as claimed and resulted in a plant which has the same two homozygous recessive alleles as Applicant's, the green fruited plant of Smith is the same as that of the instant application. The fruit of Smith would inherently contain the sucrose and ascorbic acid levels recited in the claims. Accordingly, Smith teaches the claimed method for enhancing sucrose and ascorbic acid content in a *Capsicum* plant. The claimed invention is anticipated by, or in the alternative, is obvious in view of the prior art. See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), which teaches that a product-by-process claim may be properly rejected over prior art teaching the same product produced by a different process, if the process of making the product fails to distinguish the two products. Since the Patent Office does not have the facilities to examine and compare the plant of Applicant's with that of the prior art, the burden of proof is upon the Applicant to show an unobvious distinction between the claimed plant and the plant of the prior art. See *In re Best*, 562F.2d 1252, 195 USPQ 430 (CCPA 1977).

5. Claims 12, 14-21, 23-26, 29 and 31 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shifriss et al. (Euphytica, Vol. 60, 1992, pp. 123-126) in light of Park et al. (Korean Journal of Plant Pathology, Vol. 5, Nol. 3, 1989, pp. 262-270) and Osuna-Garcia et al. (Journal of Agricultural and Food Chemistry, Vol. 46, Nol. 12, Dec 1998, pp. 5093-5096).

Shifriss teaches two crosses which are encompassed by the claimed invention. Shifriss teaches a cross between Permagneen ($y/y;cl/cl$) and Permanent white ($y/y;CL/CL$) (Table 2 and p. 126). The F1 generation is $y/y;CL/cl$. The F2 generation was obtained by crossing $y/y;CL/cl \times yy/CLcl$, and by simple Mendelian genetics, one of the resulting F2 offspring combination would be $y/y;cl/cl$, as shown in Table 2, population no. 11563. $y/y;cl/cl$ genotype results in a ripe green fruit. $y/y;CL/cl$ denotes the F1 parents have a deletion, rearrangement or mutant in the enzyme capsanthin-capsorubin synthase and a recessive cl allele (see full explanation above). Accordingly, the F2 cross of $y/y;CL/cl \times y/y;CL/cl$ anticipates the claimed invention. Alternatively, Shifriss teaches a cross between a brown fruited plant ($Y/Y;cl/cl$) with Permanent White ($y/y;CL/CL$). The white color is due to a genetic linkage with a third gene and is not relevant here. Crossing $Y/Y;cl/cl \times y/y;CL/CL$ would result in $Y/y;CL/cl$ F1 plants. The results of the F2 cross $Y/y;CL/cl \times Y/y;CL/cl$ is shown in Table 2, population no. 11562, whereby one of the resulting F2 progeny is $y/y;cl/cl$. The $Y/y;CL/cl$ denotes the F1 parents have a deletion, rearrangement or mutant in the enzyme capsanthin-capsorubin synthase and a recessive cl allele. Accordingly, the F2 cross of $Y/y;CL/cl \times Y/y;CL/cl$ of Shifriss anticipates the claimed invention. Since the pepper of Shifriss stays green when mature (ripened), it would inherently have higher sucrose and ascorbic acid content than an immature green pepper. Park teaches peppers increase in sugar (sucrose) content as they ripen (Abstract). Osuna-Garcia teaches the ascorbic acid content also increases as the fruit ripens. Because the method step of Shifriss is identical to that as claimed and resulted in a plant which is encompassed by the claims,

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the plant of Shifriss would inherently contain the sucrose and ascorbic acid levels recited in the claims. Accordingly, Shifriss teaches the claimed method for enhancing sucrose and ascorbic acid content in a *Capsicum* plant. The claimed invention is anticipated by, or in the alternative, is obvious in view of the prior art. See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), which teaches that a product-by-process claim may be properly rejected over prior art teaching the same product produced by a different process, if the process of making the product fails to distinguish the two products. Since the Patent Office does not have the facilities to examine and compare the plant of Applicant's with that of the prior art, the burden of proof is upon the Applicant to show an unobvious distinction between the claimed plant and the plant of the prior art. See *In re Best*, 562F.2d 1252, 195 USPQ 430 (CCPA 1977).

Remarks

6. No claim is allowed.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong T. Bui whose telephone number is 571-272-0793.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phuong T. Bui/
Primary Examiner, Art Unit 1638